

# F03MSV-ND\*

**FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK**



## DESCRIPTION

This modular stack valve is a non-compensated flow control valve with a check valve for reverse free flow.

## OPERATIONS

This valve increases its orifice value from fully closed to fully open with counter-clockwise rotation.

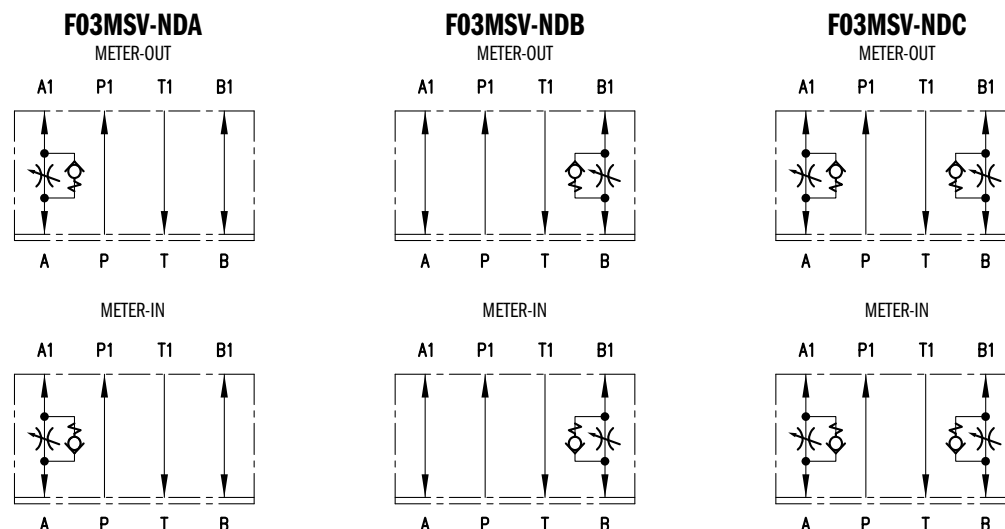
Meter-in or meter-out configuration is determined by the orientation of the body to mounting surface.

Available with flow control function on line A, B, or both A + B.

## TYPICAL PERFORMANCE SPECIFICATIONS

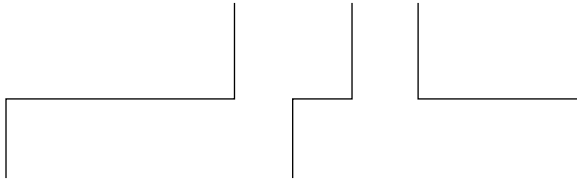
<b>MAXIMUM OPERATING PRESSURE</b>		5000 psi	350 bar
<b>CRACKING PRESSURE</b>		7 psi	0.5 bar
<b>MAXIMUM FLOW RATE</b>	Controlled Lines	13 gpm	50 l/min
	Free Lines	20 gpm	75 l/min
<b>MINIMUM FLOW RATE</b>	Controlled Lines with $\Delta P = 145$ psi	$\leq 0.015$ gpm	$\leq 0.06$ l/min
<b>MOUNTING SURFACE</b>		NFPA D03 ISO 4401-03-02-0-05	
<b>WEIGHT</b>		2.87 lbs	1.3 kg

## AVAILABLE VERSIONS



# IDENTIFICATION CODE

**F03MSV-ND**  -  **C** -  \_\_\_\_\_ DESIGN LETTER



CONTROL PORT	
<b>A</b>	Port A
<b>B</b>	Port B
<b>C</b>	Port A and B

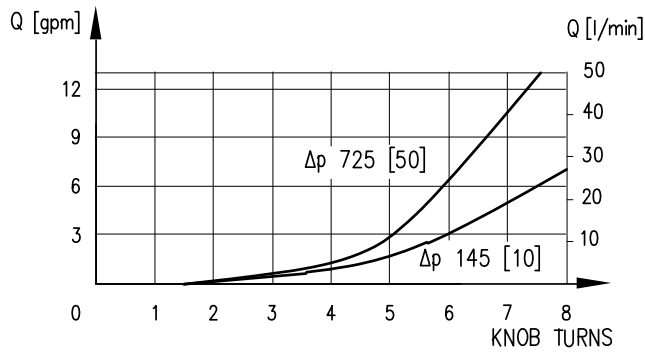
SEAL	
<b>A</b>	Buna (STD)
<b>G</b>	Viton

BODY MATERIAL	
<b>C</b>	Cast Iron

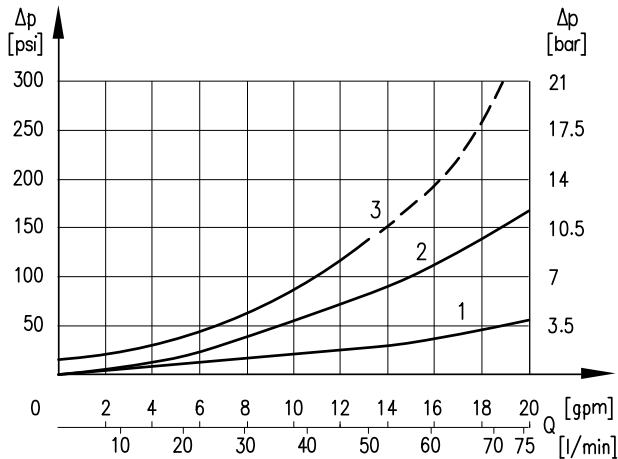
TYPICAL ORDERING CODE:  
**F03MSV-NDA-AC-D**

# PERFORMANCE CURVES

## CONTROLLED PORT ADJUSTMENT



## PRESSURE DROPS Δp - Q

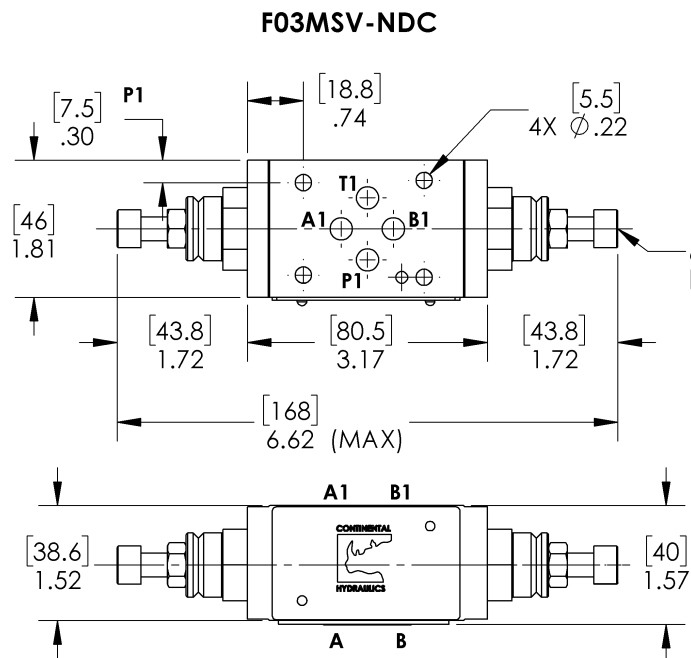
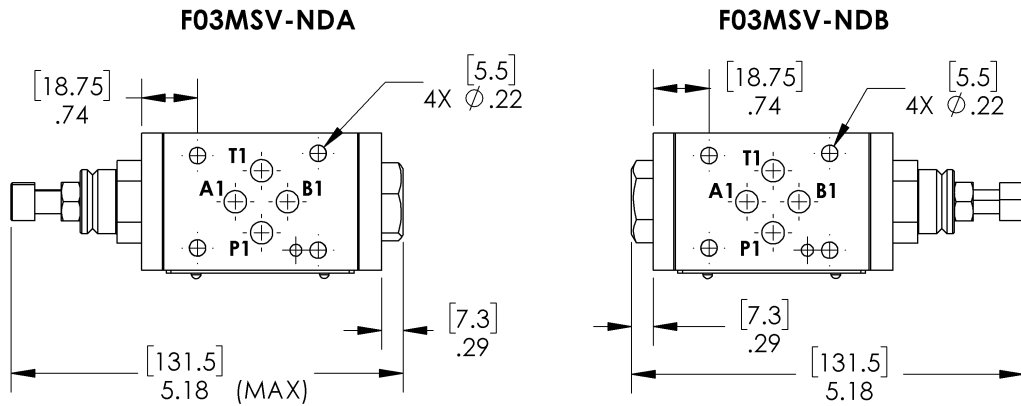


CURVE	FLOW PATH
<b>1</b>	P port, T port
<b>2</b>	A port or B port w/o flow control
<b>3</b>	Reverse free flow thru check

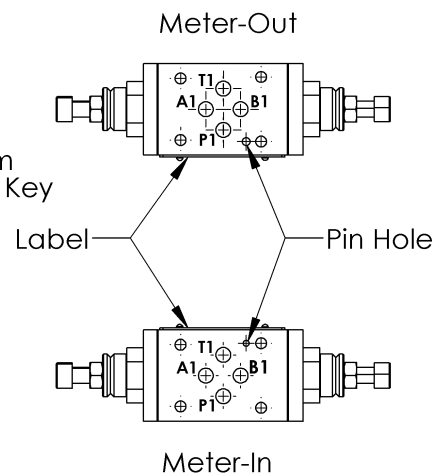
**NOTE:**  
Values obtained with oil viscosity of 36 cSt at 122°F (50°C).

## DIMENSIONS

Dimensions in mm [IN]



## MOUNTING - TOP VIEW



**NOTE:**  
Remove directional control valve locator pin when configuring for meter-in.

# APPLICATION DATA

## FLUIDS

All pressure drops shown on these data pages are based on 170 SUS fluid viscosity and 0.87 specific gravity. For any other specific gravity (G1) the pressure drop ( $\Delta P$ ) will be approx.  $\Delta P1 = \Delta P (G1/G)$ . See the chart for other viscosities.

<b>FLUID</b>	Cst	10	14.5	32	36	43	54	65	76	86	108	216	324	400
<b>VISCOSITIES</b>	SUS	60	75	150	170	200	250	300	350	400	500	1000	1500	1900
<b>MULTIPLIER</b>		0.77	0.81	0.97	1.00	1.04	1.10	1.15	1.20	1.24	1.31	1.56	1.72	1.83

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals. For fluids HFDR type (phosphate esters) use FPM seals (code G). For the use of other kinds of fluid such as HFA, HFB, HFC, please consult our technical department.

Using fluids at temperatures higher than 180 °F causes the accelerated degradation of seals as well as degradation of the fluids physical and chemical properties.

From a safety standpoint, temperatures above 130 degrees F are not recommended.

<b>RANGE TEMPERATURES:</b>	Ambient	- 4 to +130 °F	-20 to +54 °C
	Fluid	4 to +180 °F	-20 to +82 °C
<b>FLUID VISCOSITY</b>	Range	60 -1900 SUS	10 400 cSt
	Recommended	120 SUS	25 cSt
<b>FLUID CONTAMINATION</b>		ISO 4406:1999 Class 20/18/15	

## SEAL KIT

<b>BUNA SEAL KIT</b>	1013661
<b>VITON SEAL KIT</b>	1013662

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